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Editor: Dermott 'Red' Cullen

FREE Subscription: E.mail Red Cullen at cullen1@llnl.gov

What Is TART?

TART is a General Purpose Time Dependent Coupled Neutron Photon Monte Carlo radiation transport code that uses 3-D Combinatorial geometry. What makes TART so useful is that it is currently Internationally available to run on **ANY computer**, and it is incredibly **FAST**. For details concerning TART, see, my website, <http://reddog1.llnl.gov>

TART98 CD Now available

TART98 CD is now Internationally available through local codes centers, see my website for [Availability](#). TART98 CD contains complete documentation and the entire TART system ready to use on virtually ANY computer: UNIX, IBM-PC/Windows, IBM-PC/Linux, PowerMAC, CRAY, and other computers. It runs on everything except my wristwatch (I'm working on that).

Improved Neutron and Photon Data

This distribution includes the latest neutron and photon interaction data, in the new 650 group neutron and 701 point photon representation. The neutron data has been extended down to 10^{-4} eV, to allow more accurate thermal energy applications. The photon data has been extended up to 1 GeV, to allow treatment of higher energy applications.

TARTAID Released

If you have ever prepared input for ANY combinatorial geometry Monte Carlo code, you know how difficult it is to get it right.

With TARTAID you can forget about all of those problems. TARTAID is distributed as part of TART98 CD. It is an interactive graphics code that runs on any computer. It allows you to start from scratch and interactively prepare complete TART input decks. In just a few minutes you can create input decks defining your geometry in great detail, using many thousands of spatial zones.

To see how easy it is to create a complete input deck using TARTAID, I suggest you take a tour through the [TARTAID on-line tutorial](#). In just a few minutes you can become an expert in TART input preparation.

Faster than a Speeding Bullet

TART98 continues to knock the socks off of users because of its incredible speed, compared to other similar Monte Carlo radiation transport codes. I am receiving reports from users who use several different codes that TART runs their applications on average 48 times faster. To put that in perspective that means that if the other code takes eight hours (9 am to 5 pm) to complete a problem, TART can complete the same problem in ten minutes!!! And that's just using one computer processor. By using TART98's approach to multi-processing it is trivial to use hundreds or thousands of processors, to process billions and even trillions of particle histories.

Garbage In, Garbage Out

It is extremely important for code users to understand that any radiation transport code is only as good as the nuclear and atomic data that it uses. It cannot be stressed enough that regardless of how modern and easily useable today's codes are, if the nuclear and atomic data they use are not the best available, you can be in a "Garbage In, Garbage Out" situation. It is amazing to me how many hotshots are interested in writing codes to perform radiation transport calculations, and yet they totally ignore the importance of the data they use. Therefore, before deciding to use any radiation transport code you should know the pedigree of the nuclear and atomic data that it is using. In the case of TART, it always uses the most recently available ENDF/B data for both neutrons and photons. Currently TART uses the ENDF/B-VI, Release 5 neutron data, and our [EPDL97](#) photon data (now adopted as the ENDF/B standard).

Interesting Applications

If you have an interesting TART application that you would like to include in this newsletter and share with our readers, please contact Red Cullen at cullen1@llnl.gov.

Do You Need Help?

If you need help using TART contact Red Cullen at 925-423-7359. If you are having problems with TART input, send it to cullen1@llnl.gov; I'll find out what's wrong with it, fix it, and return it to you.